Fujitsu Siemens Computers

SM2 (BS2000/OSD)
*1 Version 15.0B
*2 November 2006

Release Notice

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Release Notice SM2 15.0B

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1 GENERAL

*1 The delivery group SM2 15.0B is part of the delivery unit openSM2 (BS2000/OSD).
openSM2 (BS2000/OSD) supplies the user with statistical data on the performance and utilization of a BS2000/OSD *) system, that allow the performance of the system and the applications to be improved as required.

*1 The core of SM2 V15.0B is the measurement monitor SM2. It collects measurement data for a number of measurement values. Some measurement data is always recorded (e.g. CPU memory and disk utilization) while others are recorded by special measurement programs that are switched in as needed. The measurement data is presented to a program interface for online monitoring and can also be stored into a measurement values file for later problem and trend analysis.

*1 In addition to the measurement monitor SM2, SM2 V15.0B also comprises the utility program SM2U1 for administering the measurement value files and the program SM2R1 for analyzing the measurement value files.
The powerful and comfortable client/server applications INSPECTOR (old name SM2ONLINE-PC) and ANALYZER (old name SM2R1-PC) are provided for central online monitoring of multiple BS2000/OSD systems and analysis under Microsoft Windows.

*1 INSPECTOR and ANALYZER are components of the delivery group
*2 SM2-TOOLS that is itself a component of the delivery unit
*2 openSM2 (BS2000/OSD) V6.0.
*2 In a computer network, the highest released version of
*2 SM2-TOOLS must be used on all systems to be monitored.

There are separate Release Notices for the delivery group SM2-TOOLS and these must be read before using the tools.

This Release Notice is a summary of the major extensions, dependencies and operating information with regard to the SM2
*1 V15.0B software monitor (including SM2U1 and SM2R1).

*2 The release level is that of November 2006. Changes and addi-
*2 tions are marked with '*2' in the right-hand margin.

The Release Notice is also supplied as a file in uppercase and lowercase. Customers will receive an updated version of this file should any subsequent changes be made.

To print the file, use (English version):

```
/PRINT-DOCUMENT FROM-FILE=SYSFGM.SM2.150.E,
                DOC-FORM=*TEXT(LINE-SPACING=*BY-EBCDIC-CONTR)
```

All BS2000 product Release Notices are available in the Internet. This one is available under the following URL:
*2 http://manuals.fujitsu-siemens.com/

If one or more previous versions are skipped when this product version is used, the information from the Release Notices (and README files) of the previous versions must be noted.

"*)" BS2000/OSD is a registered trademark of

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1.1 Ordering

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*1     SM2 V15.0B is part of the delivery unit
*2     openSM2 (BS2000/OSD) V6.0.
*2     openSM2 (BS2000/OSD) V6.0 can be ordered
*1     from your local distributors and is
*1     subject to the general terms and conditions
*1     of the software product use and service agreement.
```

1.2 Delivery

*1 The SM2 V15.0B files are supplied via SOLIS.
The current file and volume attributes are listed in the SOLIS2 delivery letter.
SYSSII files (if included in the delivery package) are not installed.

Summary of delivery components

SIPLIB.SM2.150	Restricted macros of SM2
SPMLNK.SM2.150	Dynamically loadable TPR part of SM2 (SPARC)
SYSDAT.SM2.150.MTFILE	Control file for SM2R1
SYSFGM.SM2.150.D	Release Notice (German)
SYSFGM.SM2.150.E	Release Notice (English)
SYSLIB.SM2.150	Include files for C program interface and procedures for the SM2 and COSMOS manual examples
SYSLNK.SM2.150	Dynamically loadable TPR part of SM2 (/390)
SYSLNK.SM2.150.SM2	Dynamically loadable TPU part of SM2
SYSLNK.SM2.150.SM2R1	Dynamically loadable part of SM2R1
SYSLNK.SM2.150.SM2U1	Dynamically loadable part of SM2U1
SYSMES.SM2.150	Message file for SM2, SM2U1, SM2R1
SYSMSP.SM2.150.D	PLI1 text file for SM2R1 (German)

```
SYSMSP.SM2.150.E      PLI1 text file for SM2R1 (English)
SYSNRF.SM2.150        Help file for Rep processing

SYSPRG.SM2.150.SM2    Prephase for loading and starting SM2
SYSPRG.SM2.150.SM2U1  Prephase for loading and starting SM2U1
SYSPRG.SM2.150.SM2R1  Prephase for loading and starting SM2R1
SYSRMS.SM2.150        Loader delivery set for SM2

SYSSDF.SM2.150        Syntax file for all statements and
                      commands of SM2, SM2U1 and SM2R1
SYSSII.SM2.150        Structure and installation
                      information for IMON
SYSSPR.SM2.150.SM2R1  Procedure for START-SM2R1 command
SYSSSC.SM2.150        DSSM declarations of SM2
```

1.3 Documentation

```
*1    The following documentation is available
*1    for SM2 V15.0B:

      openSM2 (BS2000/OSD) V6.0A Software Monitor
      Volume 1: Administration and Operation
       (Order number German : U3585-J-Z125-10
                     English: U3585-J-Z125-10-76)

      Volume 2: Evaluating and Displaying SM2 Measurement Values
       (Order number German : U41078-J-Z125-3
                     English: U41078-J-Z125-3-76)



      The following manuals are recommended for interpreting the
      measurement values supplied by SM2 and for analyzing and opti-
      mizing system performance:

      BS2000/OSD-BC V6.0  Performance Handbook
       (Order number German : U1794-J-Z125-11
                     English: U1794-J-Z125-11-76)



      The BS2000/OSD V6.0 documentation is also available on CD-ROM
      in German and English under the title BS2000/OSD SoftBooks.
      (Order number German : U26175-J8-Z125-2
                     English: U26175-J8-Z125-2-7).

      The documentation on current BS2000/OSD software products is
      also available under the following Internet address:
*2    http://manuals.fujitsu-siemens.com/
```

2 SOFTWARE EXTENSIONS

*1 SM2 V15.0B offers the following extensions and enhancements over the previous version SM2 V14.0B:

- The measurement program BCAM-CONNECTION additionally measures short connections. Until now, only the connections that existed when the SM2 measurement interval was started and when it was stopped were measured. Now, connections that are set up and stopped during the measurement interval are also measured. In addition, new connections are measured in the measurement interval that they were set up and terminated connections in the measurement interval that they were stopped. The number of requests to open a connection that were rejected are also output.

- The measurement program BCAM-CONNECTION also measures the mean INWAIT, REACT, INPROC and OUTPROC times of each message.

- The new measurement program PUBSET supplies values for imported and not locked SF pubsets or volume sets. The occupation, number of volumes, saturation level and capacity are measured.

- The measurement program TCP-IP now also measures IPV6 connections.

- The measurement program VM2000 can now support up to 99 guest systems and as of VM2000 V8.0A, they may also be on SX systems.

- The measurement program VM2000 now additionally records data for CPU pools that are output in the new VM CPU POOL report.

- Adaptations for OSD V6.0A in the MEMORY report:
  The values MAIN MEMORY FRAMES (TASK-LOC), PAGING AREA FRAMES (GS) and PAGE TRANSFERS (GS) are no longer supported by BS2000. The new value MAIN MEMORY FRAMES (EMPTY-Q) is output.

- Two new COSMOS events:
  DSM (data space manager)
  SWSR (system working set replacement)

- A new CHANNEL report supplies the amount of data output in KB/S. The previous output in PAGES/S is still supported.

- USERID and job name are now output together in the PERIODIC-TASK report.

*1 - The measurement program ISAM can now also measure values from ISAM pools in Data Spaces. The NKISAM file path serves as the ISAM pool's essential identifying feature. In addition to the identification by pool names that was previously possible, ISAM pools may now also be selected via NKISAM file names. These same measurement values are delivered in a separate report. There is no support for the user-specific measurement program ISAM.

*1 o The measurement program SAMPLIG-DEVICE allows RSC-IOs (on
*1 systems with SPARC architecture only) to be recorded for
*1 disks, TD and openCRYPT-BOX devices (BCAM V18.0, CRYPT V1.2
*1 onwards) and incorporated into the IOs for READ/WRITE ac-
*1 cess.
*1 In the case of disks, the median number of RSC-IOs executed
*1 in parallel is also recorded.

*1 o With the measurement program SERVICETIME, the detailed op-
*1 erating times (function pending, device disconnect and de-
*1 vice connect) have as yet not been recorded by SM2, as the
*1 times could not be delivered by X2000 for the channel con-
*1 nection. Only the device queue time and the remaining ser-
*1 vice time were measured by SM2.
*1 The detailed operating times can be recorded with the fol-
*1 lowing restrictions:
*1 - support for BUS peripheral devices only
*1 (without channel connection verification)
*1 - no measurement of RSC-IOs on TD or openCRYPT-BOX devices

*1 o The measurement program STORAGE-SYSTEM also records meta
*1 volume information for Symmetrix systems. The information
*1 is only given out to the SM2GDAT data interface and is
*1 written in the measurement value file. Provision for the
*1 meta information is supported with INSPECTOR and ANALYZER
*1 only, not for the issuing of SYMMETRIX reports of the TU
*1 part of SM2 or SM2R1.

*1 o The measurement program VM2000 also records data from VM
*1 groups (VM2000 V8.0A onwards).

3 TECHNICAL INFORMATION

3.1 Resource requirements

There are no minimum system equipment restrictions for using SM2, only that required for running BS2000. The memory requirement for all SM2 components is approximately 3000 PAM pages. SM2 requires the following memory at runtime:

Memory class	CL3	CL4	CL5	CL6
SM2 startup without additional measurement programs	40 KB	200 KB	300 KB	450 KB

Appreciably more memory (particularly in classes 3 and 4) may be required depending on the number of monitored devices, tasks and files as well as the number of active measurement programs.

3.2 Software configuration

The basic configuration of BS2000/OSD-BC V6.0 is required to run SM2 and, if the RESPONSTIME or UTM programs are used, also BCAM or UTM.
The BCAM-SM2 subsystem is supplied together with the BCAM subsystem, and the UTM-SM2 subsystem is supplied together with the BS2-GA subsystem.
BCAM as of V15.0 is required for the measurement program BCAM-CONNECTION.
HSMS as of V3.0A is required for the measurement program HSMS.
SHC-OSD V4.0A or higher is required to run the STORAGE-SYSTEM measurement program.

3.3 Product installation

*1 The product SM2 V15.0B must be installed with the IMON installation monitor, as the execution of the product requires a consistent Software Configuration Inventory (SCI).
The information concerning installation in the delivery cover letter and in the product documentation must be followed as well as the information given below.
The necessary inputs and the sequence of the installation are described in the IMON documentation.

If the product is not installed with the IMON installation monitor, the following points must be observed in addition to the information provided in the delivery cover letter and the product documentation:

- The SYSREP.SM2.150 loader must be generated from the SYSRMS.SM2.150 delivery set with the product RMS.

- SM2 expects the following files:
  SPMLNK.SM2.150 or SYSLNK.SM2.150,
  SYSREP.SM2.150 and
  SYSNRF.SM2.150
  under a standard user ID (defined with the DEFLUID system parameter) which must have the SWMONADM (Software Monitor Administration) privilege.
  TSOS has this privilege by default. If the three files are set up under a different user ID, the SWMONADM privilege must be assigned to this user ID and the name of the user ID must be changed accordingly in the subsystem declaration.

- The SYSMES.SM2.150 message file must be merged in using the BS2000 /MODIFY-MSG-FILE-ASSIGNMENT command.

- The SDF SYSSDF.SM2.150 syntax file must be registered.
  This is done with the following command:
  /MODIFY-SDF-PARAMETER SCOPE=*PERMANENT, -
  /SYNTAX-FILE-TYPE= -
  /*SUBSYSTEM(NAME=SYSSDF.SM2.150,SUBSYSTEM-NAME=SM2)

- The file SYSSSC.SM2.150 must not be modified, apart from the ID under which the files required for dynamic loading are stored. The file contains the SM2 subsystem declarations and is required to update the DSSM catalog.

3.4 Product use

- The SM2 subsystem is loaded and started the first time it is called under a user ID with the SWMONADM privilege. Only the SM2 modules required for running the basic functions are loaded.

- However, the SM2 subsystem can also be loaded via the DSSM /START-SUBSYSTEM SUBSYSTEM-NAME=SM2 command. SM2 can then be started under any desired ID.

- The SM2 subsystem SM2 exists until it is unloaded via the DSSM command
  /STOP-SUBSYSTEM SUBSYSTEM-NAME=SM2

- Unconditional unloading using /STOP-SUBSYSTEM SUBSYSTEM-NAME=SM2,FORCED=YES is possible but should only be used if problems are encountered.

- The SUBSYSTEM-MANAGEMENT privilege is required for the DSSM /START-SUBSYSTEM and /STOP-SUBSYSTEM commands.

3.5 Obsolete functions (and those to be discontinued)

- none -

3.6 Incompatibilities

SM2:

- Measurement program DISK
  The measurement program DISK no longer records the cylinder numbers (previously only with CKD disks).
  SM2R1 can no longer output HEADMOVEMENTS evaluations with PRINT-DISK-STATISTICS.

- MEMORY report
  The values MAIN MEMORY FRAMES (TASK-LOC),
  PAGING AREA FRAMES (GS) and
  PAGE TRANSFERS (GS)
  are no longer supported by BS2000.

- Measurement program CHANNEL-IO
  The measurement program CHANNEL-IO is started by default when the SM2 subsystem is started.
  SET-CHANNEL-IO-PARAMETERS CHANNELS=*ALL
  is set as the measurement program definition.
  An attempt to start CHANNEL-IO again is rejected with message NPS0524.
  It must be noted that no measurement programs in a list will be started if at least one of the measurement programs cannot be started.

*1 - Measurement program SERVICETIME
*1 Only the devices in ‘attached’ mode may be specified.

3.7 Restrictions

Connections of applications that use the SOCKETS(BS2000) or ICMX(BS2000) interfaces are only output globally by SM2 for the measurement program RESPONSTIME.

3.8 Procedure in the event of errors

The contents of the SM2 REP file are always required, as well as the following documentation, depending on the type of error:

For DUMPs provided by BS2000, the usual diagnostic documents are to be generated:

* for S.E.T.S.: SLED
* for system dumps : system dump
* for P1 errors: user dump

The error documents should always be provided in file form if possible, to facilitate analysis with diagnostic tools.

For incorrect measurement data:

* SM2 start and stop procedures
* SM2 measurement values file
* SM2R1 analysis procedure
* Hardcopy printout of the SM2 report
  (only for errors in the online statistics)

The following additional information simplifies error diagnosis:

* Which NPSxxxx messages were output ?
* Listing on the SM2 system task state
  (see the SM2 SHOW-SM2-STATUS statement)
* Which measurement programs were active ?
  (SM2 start procedure required)
* Did the error occur during operation or while processing an SM2 statement?
* Special conditions (e.g. new versions of programs whose data is recorded by SM2, such as DAB, PCS, etc.)

4 HARDWARE SUPPORT

*1 The SM2 V15.0B software monitor supports all hardware components served by BS2000/OSD-BC V6.0.

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